

# wwPDB X-ray Structure Validation Summary Report (i)

May 23, 2020 – 05:40 am BST

PDB ID : 5TJF

Title : The crystal structure of Allophycocyanin from the red algae Gracilaria chilensis Authors : Figueroa, M.; Dagnino, J.; Kerff, F.; Chartier, P.; Bunster, M.; Martinez-

Oyanedel, J.

 $Deposited \ on \quad : \quad 2016\text{-}10\text{-}04$ 

Resolution : 2.30 Å(reported)

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org
A user guide is available at

https://www.wwpdb.org/validation/2017/XrayValidationReportHelp with specific help available everywhere you see the (i) symbol.

The following versions of software and data (see references (1)) were used in the production of this report:

Mol Probity : 4.02b-467

Mogul: 1.8.5 (274361), CSD as541be (2020)

Xtriage (Phenix) : 1.13 EDS : 2.11

buster-report : 1.1.7 (2018)

Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)

 $Refmac \quad : \quad 5.8.0158$ 

CCP4 : 7.0.044 (Gargrove)

Ideal geometry (proteins) : Engh & Huber (2001) Ideal geometry (DNA, RNA) : Parkinson et al. (1996)

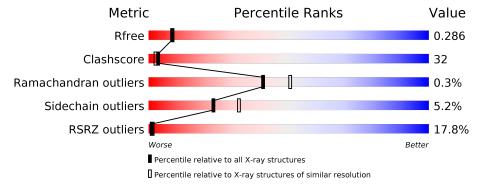
Validation Pipeline (wwPDB-VP) : 2.11

## 1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure: X- $RAY\ DIFFRACTION$ 

The reported resolution of this entry is 2.30 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive $(\# \mathrm{Entries})$	$egin{aligned}  ext{Similar resolution} \ (\# ext{Entries},  ext{resolution range}( ext{Å})) \end{aligned}$
$R_{free}$	130704	5042 (2.30-2.30)
Clashscore	141614	5643 (2.30-2.30)
Ramachandran outliers	138981	5575 (2.30-2.30)
Sidechain outliers	138945	5575 (2.30-2.30)
RSRZ outliers	127900	4938 (2.30-2.30)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain					
			19%					
1	A	160		65%	31%			
			17%					
2	В	161		61%	36%	•		

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:



Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
6	CL	A	209	_	-	-	X
6	CL	В	216	-	-	X	-
6	CL	В	218	-	-	X	-



# 2 Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 5535 atoms, of which 2500 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

• Molecule 1 is a protein called Allophycocyanin alpha subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
1	A	160	Total 2386	C 754	H 1185	N 205	O 236	S 6	0	0	0

• Molecule 2 is a protein called Allophycocyanin beta subunit.

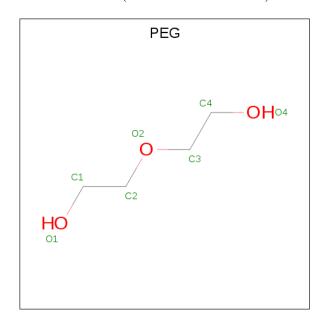
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace		
9	B	161	Total	С	Н	N	О	S	0	0	0
	В	101	2425	764	1204	207	243	7	0	U	

• Molecule 3 is PHYCOCYANOBILIN (three-letter code: CYC) (formula: C<sub>33</sub>H<sub>40</sub>N<sub>4</sub>O<sub>6</sub>).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf		
2	A	1	Total	С	H	N	О	0	0	
$\begin{array}{ c c c c c } \hline 3 & A & \end{array}$	1	79	33	36	4	6	U			
2	D	1	Total	С	H	N	О	0	0	
3	D	1	80	33	37	4	6	U		



• Molecule 4 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: C<sub>4</sub>H<sub>10</sub>O<sub>3</sub>).



Mol	Chain	Residues	${f Atoms}$				ZeroOcc	AltConf	
1	Λ	1	Total	С	Н	О	0	0	
4	A	1	14	4	8	2	U	0	
1	Λ	1	Total	С	Н	О	0	0	
4	Α	1	17	4	10	3	U		
4	D	1	Total	С	Н	О	0	0	
4	Б	1	17	4	10	3	U	0	
1	D	1	Total	С	Н	О	0	0	
4	В	$\mathbf{B} \mid \mathbf{I} \mid$	17	4	10	3	U	0	

• Molecule 5 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	В	12	Total Na 12 12	0	0
5	A	5	Total Na 5 5	0	0

• Molecule 6 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	${f Atoms}$	ZeroOcc	AltConf
6	В	4	Total Cl 4 4	0	0
6	A	1	Total Cl 1 1	0	0

• Molecule 7 is water.



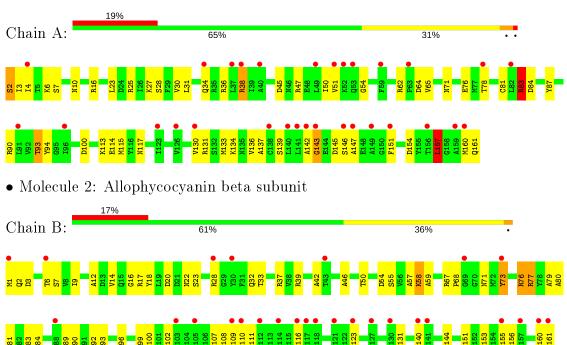
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	222	Total O 222 222	0	0
7	В	256	Total O 256 256	0	0



# 3 Residue-property plots (i)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Allophycocyanin alpha subunit





# 4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 3 2 1	Depositor
Cell constants	97.41Å 97.41Å 63.83Å	Depositor
a, b, c, $\alpha$ , $\beta$ , $\gamma$	$90.00^{\circ}$ $90.00^{\circ}$ $120.00^{\circ}$	Depositor
Resolution (Å)	42.18 - 2.30	Depositor
Resolution (A)	42.18 - 2.02	EDS
% Data completeness	97.3 (42.18-2.30)	Depositor
(in resolution range)	97.2 (42.18-2.02)	EDS
$R_{merge}$	0.13	Depositor
$R_{sym}$	(Not available)	Depositor
$< I/\sigma(I) > 1$	1.07 (at 2.01Å)	Xtriage
Refinement program	PHENIX (1.10.1_2155: ???)	Depositor
$R, R_{free}$	0.257 , $0.284$	Depositor
$\Pi,\ \Pi free$	0.263 , $0.286$	DCC
$R_{free}$ test set	1137 reflections $(5.00\%)$	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	23.0	Xtriage
Anisotropy	0.885	Xtriage
Bulk solvent $k_{sol}(e/Å^3)$ , $B_{sol}(Å^2)$	0.39 , 71.2	EDS
L-test for twinning <sup>2</sup>	$< L >=0.49, < L^2>=0.32$	Xtriage
Estimated twinning fraction	0.044 for -h,-k,l	Xtriage
$F_o, F_c$ correlation	0.89	EDS
Total number of atoms	5535	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	31.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: The largest off-origin peak in the Patterson function is 5.24% of the height of the origin peak. No significant pseudotranslation is detected.

<sup>&</sup>lt;sup>2</sup>Theoretical values of <|L|>,  $< L^2>$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.



<sup>&</sup>lt;sup>1</sup>Intensities estimated from amplitudes.

## 5 Model quality (i)

### 5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: CYC, NA, MEN, PEG, CL

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with |Z| > 5 is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol Chain		Boı	nd lengths	Bond angles		
10101	Chain	RMSZ	# Z  > 5	RMSZ	# Z >5	
1	A	0.45	$2/1215 \ (0.2\%)$	0.56	3/1637 (0.2%)	
2	В	0.63	$4/1227 \ (0.3\%)$	0.57	1/1659 (0.1%)	
All	All	0.55	$6/2442 \ (0.2\%)$	0.56	4/3296 (0.1%)	

The worst 5 of 6 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	$\mathbf{Observed}(\mathbf{\mathring{A}})$	$\operatorname{Ideal}( ext{\AA})$
2	В	76	ARG	CZ-NH1	6.83	1.42	1.33
2	В	76	ARG	CZ-NH2	6.46	1.41	1.33
2	В	77	ARG	CZ-NH1	6.31	1.41	1.33
1	A	83	ARG	CZ-NH1	6.08	1.41	1.33
2	В	77	ARG	CZ-NH2	5.64	1.40	1.33

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	$\mathbf{Observed}(^o)$	$\operatorname{Ideal}(^{o})$
1	A	84	ASP	CB-CG-OD1	6.44	124.10	118.30
1	A	83	ARG	NE-CZ-NH1	-6.17	117.22	120.30
1	A	157	LEU	CA-CB-CG	5.44	127.81	115.30
2	В	77	ARG	NE-CZ-NH1	-5.40	117.60	120.30

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within



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the asymmetric	unit.	wnereas	5vmm-	Ciasnes	IISUS S	vmmetrv	related	ciasnes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1201	1185	1186	69	0
2	В	1221	1204	1208	81	1
3	A	43	36	37	12	1
3	В	43	37	38	10	0
4	A	13	18	17	2	0
4	В	14	20	19	0	0
5	A	5	0	0	0	0
5	В	12	0	0	0	0
6	A	1	0	0	0	0
6	В	4	0	0	7	0
7	A	222	0	0	58	6
7	В	256	0	0	67	9
All	All	3035	2500	2505	164	11

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 32.

The worst 5 of 164 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	$egin{aligned}  ext{Interatomic} \  ext{distance} & ( ext{Å}) \end{aligned}$	$egin{aligned}  ext{Clash} \  ext{overlap} \ ( ext{\AA}) \end{aligned}$
2:B:76:ARG:HD2	7:B:315:HOH:O	1.42	1.19
2:B:76:ARG:CD	7:B:315:HOH:O	1.96	1.14
1:A:28:SER:O	7:A:302:HOH:O	1.72	1.06
2:B:99:GLY:O	7:B:301:HOH:O	1.71	1.05
6:B:218:CL:CL	7:B:436:HOH:O	2.11	1.04

The worst 5 of 11 symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	$egin{aligned}  ext{Interatomic} \  ext{distance} \ ( ext{Å}) \end{aligned}$	$egin{aligned}  ext{Clash} \  ext{overlap} & ( ext{Å}) \end{aligned}$
7:A:422:HOH:O	7:A:441:HOH:O[5_799]	1.57	0.63
7:B:432:HOH:O	7:B:476:HOH:O[3_695]	1.76	0.44
7:A:403:HOH:O	7:B:459:HOH:O[2_985]	1.78	0.42
7:A:457:HOH:O	7:B:459:HOH:O[2_985]	1.85	0.35
7:A:459:HOH:O	7:B:446:HOH:O[2_985]	1.99	0.21



### 5.3 Torsion angles (i)

#### 5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Analysed Favoured Allowed		Outliers	Percentiles
1	A	$156/160 \; (98\%)$	146 (94%)	9 (6%)	1 (1%)	25 31
2	В	157/161~(98%)	147 (94%)	10 (6%)	0	100 100
All	All	313/321 (98%)	293 (94%)	19 (6%)	1 (0%)	41 50

#### All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	Α	143	GLY

#### 5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric Outliers		Percentiles		
1	A	$124/130 \ (95\%)$	116 (94%)	8 (6%)	17 23		
2	В	126/127~(99%)	121 (96%)	5 (4%)	31 44		
All	All	250/257~(97%)	237 (95%)	13 (5%)	23 32		

5 of 13 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	139	SER
1	A	157	LEU
2	В	123	ILE
1	A	93	THR
2	В	73	TYR



Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

#### 5.3.3 RNA (i)

There are no RNA molecules in this entry.

#### 5.4 Non-standard residues in protein, DNA, RNA chains (i)

1 non-standard protein/DNA/RNA residue is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with |Z| > 2 is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type Chain		Res	Link	В	ond leng	gths Bond angles			gles
WIOI	Type	Chain	res	LIIIK	Counts	RMSZ	# Z  > 2	Counts   RMSZ   $\# Z  > 2$		
2	MEN	В	71	2	7,8,9	0.89	0	6,9,11	1.39	1 (16%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MEN	В	71	2	-	2/7/8/10	_

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	$\mathbf{Observed}(^o)$	$\operatorname{Ideal}({}^o)$
2	В	71	MEN	CB-CA-C	-2.63	106.54	111.47

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	В	71	MEN	CA-CB-CG-OD1

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Mol	Chain	Res	Type	Atoms
2	В	71	MEN	CA-CB-CG-ND2

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	В	71	MEN	1	0

#### 5.5 Carbohydrates (i)

There are no carbohydrates in this entry.

#### 5.6 Ligand geometry (i)

Of 28 ligands modelled in this entry, 22 are monoatomic - leaving 6 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with |Z| > 2 is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Tune	Chain	Res	Link	В	Bond lengths			Bond angles		
10101	Type	Chain		LIIIK	Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2	
3	CYC	В	201	-	36,46,46	3.65	16 (44%)	44,67,67	3.57	22 (50%)	
4	PEG	В	203	5	6,6,6	0.40	0	5,5,5	0.29	0	
4	PEG	В	202	-	6,6,6	0.42	0	5,5,5	0.30	0	
4	PEG	A	202	-	5,5,6	0.49	0	4,4,5	0.24	0	
3	CYC	A	201	1	36,46,46	3.61	13 (36%)	44,67,67	3.26	22 (50%)	
4	PEG	A	203	-	6,6,6	0.44	0	5,5,5	0.16	0	

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

$\mathbf{N}$	Iol	Type	Chain	Res	Link	Chirals	Torsions	Rings
	3	CYC	В	201	_	_	6/21/74/74	0/4/4/4

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Mol	Type	Chain	${f Res}$	Link	Chirals	Torsions	Rings
4	PEG	В	203	5	_	1/4/4/4	-
4	PEG	В	202	_	-	0/4/4/4	-
4	PEG	A	202	_	-	1/3/3/4	-
3	CYC	A	201	1	-	7/21/74/74	0/4/4/4
4	PEG	A	203	-	-	1/4/4/4	-

The worst 5 of 29 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	$\mathbf{Z}$	${ m Observed}({ m \AA})$	$\operatorname{Ideal}( ext{\AA})$
3	A	201	CYC	CHA-C1A	15.77	1.48	1.35
3	В	201	CYC	CHA-C1A	15.54	1.48	1.35
3	В	201	CYC	CHB-C1B	5.76	1.51	1.38
3	A	201	CYC	C2A-C3A	5.76	1.49	1.36
3	В	201	CYC	CHB-C4A	5.65	1.53	1.40

The worst 5 of 44 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	$\mathbf{Observed}(^o)$	$\mathbf{Ideal}(^o)$
3	В	201	CYC	CMA-C3A-C4A	11.28	142.44	125.06
3	A	201	CYC	C3B-C4B-NB	10.42	115.20	106.78
3	В	201	CYC	OC-C1C-C2C	-8.75	119.22	126.17
3	В	201	CYC	C3B-C4B-NB	8.22	113.42	106.78
3	A	201	CYC	OB-C4B-C3B	-6.93	120.52	128.04

There are no chirality outliers.

5 of 16 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	201	CYC	C2A-CAA-CBA-CGA
3	A	201	CYC	ND-C1D-CHD-C4C
3	A	201	CYC	C2D-C1D-CHD-C4C
3	В	201	CYC	NA-C4A-CHB-C1B
3	В	201	CYC	C4B-C3B-CAB-CBB

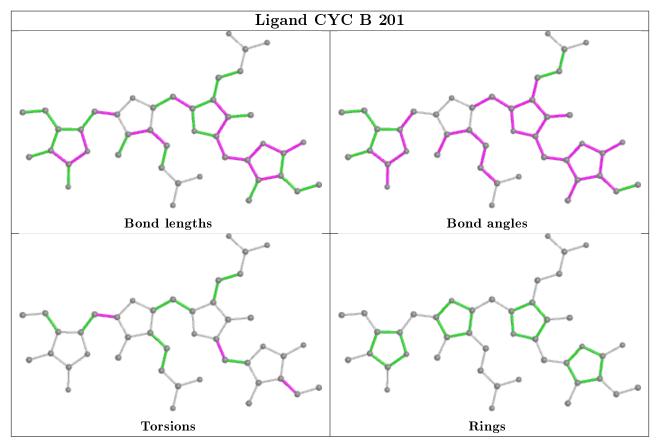
There are no ring outliers.

3 monomers are involved in 25 short contacts:

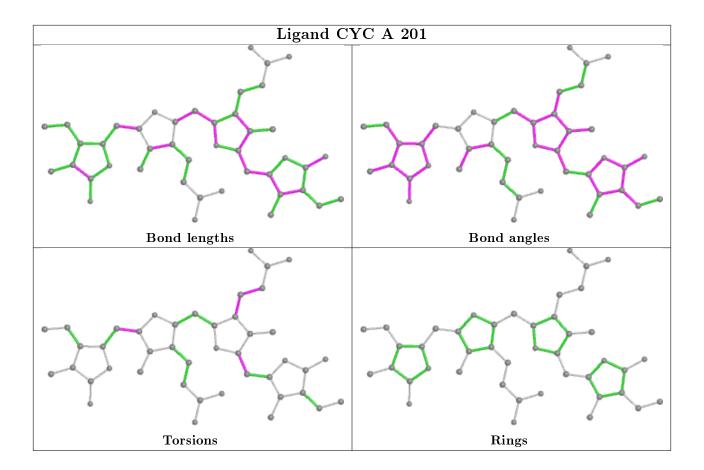
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	В	201	CYC	10	0
3	A	201	CYC	12	1
4	A	203	PEG	2	0



The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.







# 5.7 Other polymers (i)

There are no such residues in this entry.

# 5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.



## 6 Fit of model and data (i)

#### 6.1 Protein, DNA and RNA chains (i)

In the following table, the column labelled '#RSRZ>2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median,  $95^{th}$  percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ $>$	$\#\mathrm{RSRZ}{>}2$		$OWAB(A^2)$	$\mathbf{Q}{<}0.9$	
1	A	160/160 (100%)	1.25	30 (18%)	1	1	16, 31, 46, 60	0
2	В	160/161 (99%)	1.13	27 (16%)	1	2	15, 31, 45, 58	0
All	All	$320/321 \ (99\%)$	1.19	57 (17%)	1	1	15, 31, 45, 60	0

The worst 5 of 57 RSRZ outliers are listed below:

Mol	Chain	${f Res}$	Type	RSRZ
1	A	123	ILE	4.8
2	В	109	LEU	4.2
1	A	147	ALA	4.0
1	A	143	GLY	3.7
2	В	1	MET	3.6

#### 6.2 Non-standard residues in protein, DNA, RNA chains (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median,  $95^{th}$  percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	${f B\text{-factors}}({f \AA}^2)$	Q < 0.9
2	MEN	В	71	9/10	0.69	0.30	30,32,32,32	0

### 6.3 Carbohydrates (i)

There are no carbohydrates in this entry.



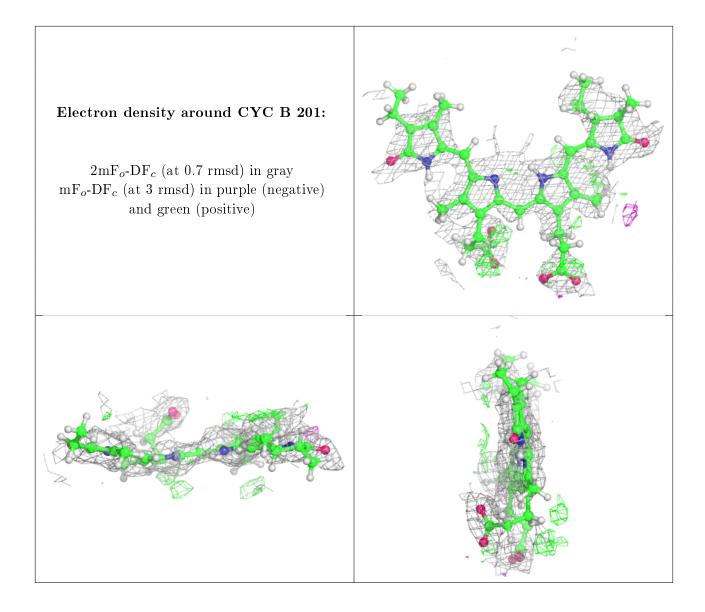
#### 6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median,  $95^{th}$  percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

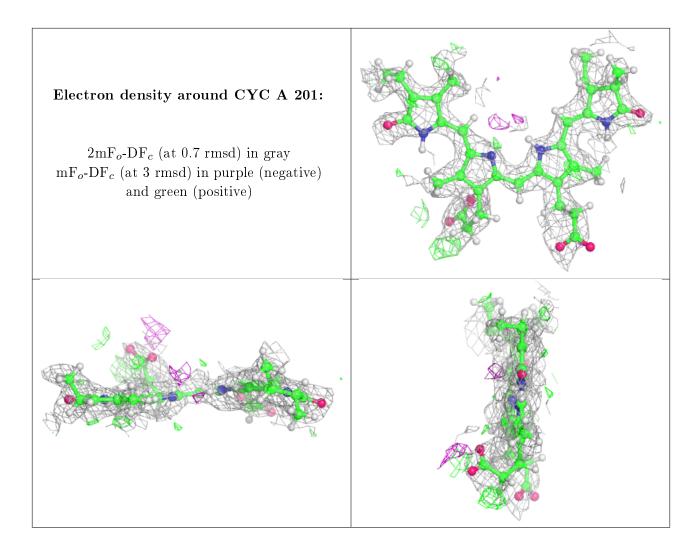
Mol	Type	Chain	Res	Atoms	RSCC	RSR	$oxed{ \mathbf{B} ext{-}\mathbf{factors}(\mathbf{\mathring{A}}^2) }$	Q<0.9
5	NA	В	215	1/1	0.55	0.25	32,32,32,32	1
4	PEG	A	203	7/7	0.61	0.38	34,42,66,66	0
3	CYC	В	201	43/43	0.66	0.32	27,29,34,36	80
5	NA	A	207	1/1	0.70	0.38	30,30,30,30	0
3	CYC	A	201	43/43	0.71	0.28	19,23,28,29	79
5	NA	A	205	1/1	0.71	0.22	35,35,35,35	0
4	PEG	A	202	6/7	0.74	0.28	26,26,32,32	0
6	CL	A	209	1/1	0.77	0.48	30,30,30,30	0
5	NA	В	210	1/1	0.78	0.27	30,30,30,30	0
6	CL	В	217	1/1	0.81	0.14	30,30,30,30	0
4	PEG	В	202	7/7	0.83	0.21	29,31,38,39	0
4	PEG	В	203	7/7	0.84	0.20	30,32,49,49	0
5	NA	В	214	1/1	0.87	0.15	29,29,29,29	0
5	NA	В	206	1/1	0.89	0.09	26,26,26,26	0
5	NA	В	208	1/1	0.90	0.13	29,29,29,29	0
5	NA	В	205	1/1	0.90	0.11	35,35,35,35	0
5	NA	В	207	1/1	0.91	0.10	31,31,31,31	0
5	NA	A	204	1/1	0.91	0.09	30,30,30,30	0
5	NA	В	213	1/1	0.92	0.25	24,24,24,24	0
5	NA	В	211	1/1	0.92	0.16	30,30,30,30	0
5	NA	В	209	1/1	0.93	0.18	30,30,30,30	0
5	NA	В	212	1/1	0.93	0.12	35,35,35,35	0
5	NA	A	206	1/1	0.93	0.13	28,28,28,28	0
6	CL	В	218	1/1	0.94	0.22	30,30,30,30	0
6	CL	В	219	1/1	0.94	0.12	30,30,30,30	0
5	NA	A	208	1/1	0.94	0.17	30,30,30,30	0
5	NA	В	204	1/1	0.97	0.06	28,28,28,28	0
6	CL	В	216	1/1	0.97	0.12	30,30,30,30	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.









# 6.5 Other polymers (i)

There are no such residues in this entry.

